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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/634,221      | 08/04/2003  | Peter D. Roberts     | LSBC-0137-CP04B     | 1497             |

27860 7590 10/18/2007  
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| EXAMINER |
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ZHENG, LI

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| ART UNIT | PAPER NUMBER |
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1638

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| MAIL DATE | DELIVERY MODE |
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10/18/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/634,221 | <b>Applicant(s)</b><br>ROBERTS ET AL. |  |
|                              | <b>Examiner</b><br>Li Zheng          | <b>Art Unit</b><br>1638               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 3,6-24,27,32 and 36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3, 6-12, 15, 20-24, 27, 32 and 36 is/are allowed.
- 6) ☒ Claim(s) 13,14 and 16-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's cancellations of claims 4-5, 25, 28-29, 31, 33-35 and 37, and amendment to claims 3, 6-20, 22, 27, 32 and 36 filed on 7/28/2007 are acknowledged.

Claims 3, 6-24, 27, 32 and 36 are pending and examined on the merits.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The objection to the specification is withdrawn due to amendment to the specification.

4. The objections to the claims are withdrawn due to claim amendment.

5. The rejection of claim 17 under 35 U.S.C. 112 second paragraph is withdrawn due to claim amendment.

***Claim Rejections - 35 USC § 112***

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6. Claims 13-14, and 16-19 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a bipartite RNA viral vector, which comprises any modified tobavirus RNA-1 comprising a first foreign RNA sequence encoding all or part of putrescine N-methyltransferase, wherein said first foreign RNA sequence is operably linked to the 3' end of the stop codon of the RNA sequence that encodes for a 16 kDa cysteine-rich protein of RNA-1, and any modified tobavirus RNA-2 comprising a promoter-gene construct comprising a subgenomic promoter operably linked to a second foreign RNA sequence encoding all or part of putrescine N-methyltransferase, wherein said promoter-gene construct is inserted in place of the 2C gene, does not reasonably provide enablement for said bipartite RNA viral vector wherein the first and second foreign RNA sequence encode all or part of any Nop 10-like small nucleolar ribonucleoprotein, any DEAD box RNA helicase, any methionine synthase, any PRP 19-like splicesomal protein, any CRS2 protein, or any GTP-binding protein. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims, for the reasons of record stated in the Office action mailed February 27, 2007. Applicants traverse in the paper filed July 28, 2007. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue that claim 13 is supported by Example 14 wherein the screening of such a vector is described and the class of Nop 10-like small nucleolar ribonucleoprotein is described and that the utility of the vector in changing phenotypic traits in the plant host, affecting biochemical pathways within the plant, or affecting

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endogenous gene expression within the plant is described in many places in the specification (response, paragraph bridging pages 8-9). However, the utilities claimed as above are not specific. The specification teaches that the transgenic plant comprising claimed vector of claim 13 shows increased stem circumference, distorted leaves and severely stunted growth. However, it is not clear how one in the forest industry would use the plant, given that the plants are also severely stunted.

Applicants further present similar arguments for rejections of claims 14 and 16-19. However, for the same reason discussed above, the argument is not found persuasive.

In addition, Applicants are reminded that the claimed vectors broadly encompass all GTP-binding proteins and all the DEAD box RNA helicases, both of which represent a large family members. It is unclear, silencing which member in the gene family would show similar phenotype as the one exemplified in the specification. Further, even for the exemplified gene, it also unclear, how many members in the gene family are affected by the exemplified vector. Since gene silencing is sequence dependent, it is unclear which part of sequence can be used to generating a silencing vector which confers similar phenotype as the exemplified vectors.

### ***Summary***

No claim is allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

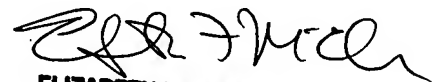
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li Zheng whose telephone number is 571-272-8031. The examiner can normally be reached on Monday through Friday 9:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
ELIZABETH MCELWAIN  
PRIMARY EXAMINER